

## CLAIM AMENDMENTS

Claims 1-20 (Canceled)

Claim 21 (New)

A UV ray curable ink used for an ink jet recording apparatus which has on-demand type ink jet nozzles that employ two or more separate droplets each with a different volume comprising:

a pigment,

a polymerizable compound,

a photopolymerization initiator, and

a polymer dispersant,

wherein the UV ray curable ink has an absolute value of viscosity difference between a viscosity at 25°C at shear rate 10 (1/s) and a viscosity at 25°C at shear rate 1000 (1/s) being not more than 5 mPa·s, and has a surface tension at 25°C of from 26 to 88 mN/m.

Claim 22 (New)

The UV ray curable ink of claim 21, wherein the absolute value of a viscosity difference in viscosity at 25°C at shear rate 10 (1/s) between the ink and the polymerizable compound is not more than 10 mPa·s.



Claim 23 (New)

The UV ray curable ink of claim 21, wherein the absolute value of the viscosity difference of the ink between a viscosity at 25°C at shear rate 10 (1/s) and a viscosity at 25°C at shear rate 1000 (1/s) is not more than 2 mPa·s.

Claim 24 (New)

The UV ray curable ink of claim 21, wherein the surface tension at 25°C is from 28 to 35 mN/m.

Claim 25 (New)

The UV ray curable ink of claim 22, wherein the absolute value of a viscosity difference in viscosity at 25°C at shear rate 10 (1/s) between the ink and the polymerizable compound is not more than 5 mPa·s.

Claims 26 (New)

The UV ray curable ink of Claim 21, wherein the polymerizable compound is a cation polymerizable compound.

Claim 27(New)

The UV ray curable ink of claim 26, wherein the cation polymerizable compound is comprised of an oxetane compound



and at least one of an epoxy compound and a vinyl ether compound.

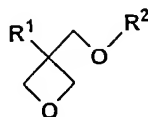
Claim 28 (New)

The UV ray curable ink of claim 27, wherein the oxetane compound has from one to four oxetane rings in the molecule.

Claim 29 (New)

The UV ray curable ink of claim 28, wherein the oxetane compound having one oxetane ring in the molecule is a compound represented by the following formula 1,

Formula 1



wherein R<sup>1</sup> represents a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a fluoroalkyl group having from 1 to 6 carbon atoms, an allyl group, an aryl group, a furyl group or a thienyl group; and R<sup>2</sup> represents an alkyl group having from 1 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, an aromatic ring-containing group, an alkylcarbonyl group having from 2 to 6 carbon

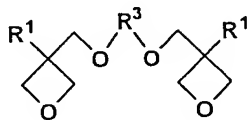


atoms, an alkoxy carbonyl group having from 2 to 6 carbon atoms, or an N-alkyl carbamoyl group having from 2 to 6 carbon atoms.

Claim 30 (New)

The UV ray curable ink of claim 28, wherein the oxetane compound having two oxetane rings in the molecule is a compound represented by the following formula 2,

Formula 2



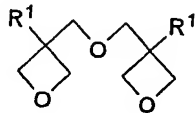
wherein  $R^1$  represents a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a fluoroalkyl group having from 1 to 6 carbon atoms, an allyl group, an aryl group, a furyl group or a thienyl group; and  $R^3$  represents a straight chained or branched alkylene group, a straight chained or branched polyalkyleneoxy group, a straight chained or branched divalent unsaturated hydrocarbon group, an alkylene group containing a carbonyl group, an alkylene group containing a carbonyloxy group, or an alkylene group containing a carbamoyl group.



Claim 31 (New)

The UV ray curable ink of claim 28, wherein the oxetane compound having two oxetane rings in the molecule is a compound represented by the following formula 7,

Formula 7

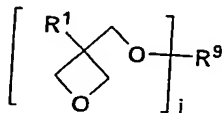


wherein R<sup>1</sup> represents a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a fluoroalkyl group having from 1 to 6 carbon atoms, an allyl group, an aryl group, a furyl group or a thienyl group.

Claim 32 (New)

The UV ray curable ink of claim 28, wherein the oxetane compound having three or four oxetane rings in the molecule is a compound represented by the following formula 8,

Formula 8



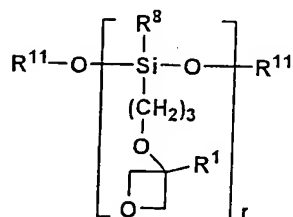


wherein R<sup>1</sup> represents a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a fluoroalkyl group having from 1 to 6 carbon atoms, an allyl group, an aryl group, a furyl group or a thienyl group; R<sup>9</sup> represents a branched alkylene group having 1 to 12 carbon atoms, a branched polyalkyleneoxy group, or a branched alkylene group containing a silylether group; and j represents an integer of 3 or 4.

Claim 33 (New)

The UV ray curable ink of claim 28, wherein the oxetane compound having from one to four oxetane rings in the molecule is a compound represented by the following formula 9,

Formula 9



wherein R<sup>1</sup> represents a hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a fluoroalkyl group having from 1 to 6 carbon atoms, an allyl group, an aryl group, a furyl group or a thienyl group; R<sup>8</sup> represents an alkyl group



having from 1 to 4 carbon atoms or an aryl group;  $R^{11}$  represents an alkyl group having 1 to 4 carbon atoms or a trialkylsilyl group; and r represents an integer of from 1 to 4.

Claim 34 (New)

The UV ray curable ink of claim 26, wherein the cation polymerizable compound content of the ink is from 1 to 97% by weight based on the weight of the ink.

Claim 35 (New)

The UV ray curable ink of claim 34, wherein the cation polymerizable compound content of the ink is from 30 to 95% by weight based on the weight of the ink.

Claim 36 (New)

The UV ray curable ink of claim 21, wherein the polymerizable compound is a radical polymerizable compound.

Claim 37 (New)

The UV ray curable ink of claim 36, wherein the radical polymerizable compound content of the ink is from 1 to 97% by weight based on the weight of the ink.



Claim 38 (New)

The UV ray curable ink of claim 37, wherein the radical polymerizable compound content of the ink is from 30 to 95% by weight based on the weight of the ink.

Claim 39 (New)

An image formation method comprising the steps of  
ejecting the UV ray curable ink of claim 21 as ink droplets onto recording material,  
employing on-demand type ink jet nozzles; and  
irradiating UV rays to the ink ejected on the recording material to form an image,  
wherein the ink droplets comprise two or more separate droplets each with a different volume.

Claim 40 (New)

The image formation method of claim 39, wherein the minimum volume of the ink droplets is less than 10 pl.